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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/806,330

03/23/2004

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EXAMINER

ABDIN, SHAHEDA A

ART UNIT

PAPER NUMBER

2629

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/806,330	Applicant(s) TORII ET AL.	
	Examiner Shaheda A. Abdin	Art Unit 2629	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 23 March 2004.
- 2a) ☒ This action is FINAL. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-3, 8-10, 18 and 19 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☐ Claim(s) _____ is/are rejected.
- 7) ☒ Claim(s) 4-7 and 11-17 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 23 March 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Amendment

1. The amendment filed on 07/18/2007 has been entered and considered by examiner.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 1, 3, 8, 10 and 20 are rejected under 35 U.S.C. 102(e) as being anticipated by Kitajima et al. (US Pub. No: 2003/0128979 A1).

(1) Regarding claim 1:

Kitajima teaches (in Fig. 2) a quality (performance) monitoring method of wavelength division multiplexed signal light for monitoring the quality (performance) of a wavelength division multiplexed signal light transmitted via an optical transmission path (e.g. transmission path at 201, 202) comprising:

branching (e.g. branching at section 131, fig. 13) a part of the wavelength division multiplexed signal light being propagated through said optical transmission path as a monitor light ([0034], fig. 13);

selecting, (e.g. optical switch select the signal to be measured and send to the demultiplexer 133) as an object to be measured, a signal light of one wavelength from the signal lights of a plurality of wavelengths contained in said branched monitor light ([0035], [0034], and fig. 13);

repeatedly measuring for a plurality of times the frequency of occurrences of bit error in a previously set time (pre determine time e.g. 15 s) for said selected signal light to be measured ([0055-0058]) (note that bit error rate is measured and rate is a continuation of counting of occurrences, i.e. in order to measured the bit error rate system must need to measure the plurality of times the frequency occurrences of bit error in a previously set time);

judging (judging at 310, optical performance monitor section, that monitor deterioration factor) based on said measurement results as to whether or not said signal light to be measured is deteriorated in the quality thereof, together with a deterioration factor; and outputting said judgment result as monitoring information ([0035], [0039], [0040], and fig. 2).

(2) Regarding claim 20:

Claim 20 is same as claim 1. Claim 20 is broader than claim 1.

(3) Regarding claim 3:

Kitajima teaches the judgment (judgment at 310) as to whether or not said signal

light to be measured is deteriorated in the quality (performance) thereof is performed based on a maximum value in the frequency of occurrences of bit error repeatedly measured for the plurality of times (performance monitoring circuit 364 for evaluating clock synchronization, frame synchronization and a bit error rate regarding the electric signal obtained by the conversion, and an electrooptical signal converter 365 for re-converting the electric signal into an optical signal; the power monitor 362 issues an optical power failure alarm when power of an optical signal is lower than a predetermined value. In addition, the performance monitoring circuit 364 detects a bit error rate of a signal, and issues an error rate alarm when the error rate is lowered than a predetermined value, therefore, in order to get a bit error rate it would repeatedly measure a plurality of times the frequency of occurrences of bit error in a previously set time for selected signal light) ([0053], ([0055-0058], Fig. 8).

(4) Regarding claim 10:

Claim 10 is same as claim 3. The limitation of claim 10 is differed from claim 3 is deterioration factor judging section which is teaches by Kitijima (Note that erroneous recognition of a occurrence of troubles diterminded by the performance monitor 310 which is issuing the alarm based on 4 kinds of deterioration factor. i.e. power deterioration of the optical signal, a synchronous state of an operation clock, a synchronous state of an optical signal frame and an error rate of the optical signal, therefore section 310 considered as deterioration factor judging section).

(5) Regarding claims 8:

Kitajima teaches branching (branching at section 131, fig. 13) a part of the

wavelength division multiplexed signal light being propagated through said optical transmission path as a monitor light ([0031], fig. 13);

a wavelength selecting section (300, optical switch) that selects, as an object to be measured, a signal light of one wavelength (2005) from the signal lights of a plurality of wavelengths contained in said branched monitor light (optical switch select the signal to be measured and send to the demultiplexer 133) ([0035], [0034], and fig. 13) ;

a bit error measuring section (performance monitoring circuit 364, detects a bit error rate ([0053], line 22) that repeatedly measures a plurality of times the frequency of occurrences of bit error in a previously set time for selected signal light to be measured ([0055], [0056]).

switching control section (305, fig. 13) that generates a switching signal for controlling an operation of said wavelength selecting section to measure bit error result ([0033], fig. 12 and [0035], fig. 13),

a deterioration factor judging section (310, fig.2, optical performance monitor section, that monitor deterioration factor) that judges whether or not said signal light to be measured is deteriorated in the quality thereof, together with deterioration a factor, and outputs said judgment result as monitoring information ([0035], [0039], [0040], and fig. 2).

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

Art Unit: 2629

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 2, 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kitajima et al. (US Pub. No: 2003/0128979 A1) view of Arnold et al. (US Pub. No: 20040052524 A1)

(1) Regarding claim 2:

Note that Kitajima teaches adjusting the power monitoring information (e.g. adjusting power at power monitor section (362) [0053] and transmission path but Kitajima does not teach a control signal generating section.

However Arnold et al. in the same field of endeavor discloses a control signal generating section (160, power controller) ([0042], fig. 2).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time of invention to incorporate a control signal generation section (160) as taught by Arnold et al. into the system of Kitajima et al., so that the system can generate a control signal for adjusting the power of signal light to be measured according to monitoring information output from the deterioration factor judging section. In this configuration the system will be improved basic performance such as suppression of a power loss of an optical signal or the like and to be capable of properly

switching and operating signal routes, and to be excellent in reliability, availability and serviceability. Thus, the system will provide an excellent function (Arnold, [0007]).

(2) Regarding claim 9:

Note that Kitajima teaches a deterioration factor judging section in part of claim 8, and an optical multiplexing section (133) but Kitajima does not teach a control signal generation section.

However Arnold et al. in the same field of endeavor discloses a control signal generating section (160, power controller) ([0042], fig. 2).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time of invention to incorporate a control signal generation section (160) as taught by Arnold et al. into the system of Kitajima et al., so that the system can generate a control signal for adjusting the power of signal light to be measured according to the monitoring information output from the deterioration factor judging section, and an optical multiplexing section that could transmit said control signal generated in said control signal generating section to the optical transmission path. In this configuration the system would provide a high performance such as suppression of a power loss of an optical signal or the like and to be capable of properly switching and operating signal routes, and to be excellent in reliability, availability and serviceability. Thus, the system will provide an excellent function (Arnold, [0007]).

6. Claims 18 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kitajima et al. (US Pub. No: 2003/0128979 A1) in view of admitted prior art (Pub. No:8-321805).

(1) Regarding claim 18:

Note that Kitajima teaches optical transmission system in which a wavelength division multiplexed signal light is transmitted but Kitajima does not teach optical transmission section and reception section via an optical transmission path and one or more repeater node disposed on said optical transmission path .

However in the admitted prior art in fig.15, discloses optical transmission section and reception section via an optical transmission path and one or more repeater node disposed on said optical transmission path.

Therefore, it would have been obvious to a person of ordinary skill in the art at the time of invention to incorporate an optical transmission section and reception section via an optical transmission path and one or more repeater node disposed on said optical transmission path as taught by admitted prior art into the optical transmission system of Kitajima so that the wavelength division multiplexed signal light could be transmitted between an optical transmission section and an optical reception section via an optical transmission path and one or more repeater node. In this configuration the system will be improved basic performance such as regulate the optical power optical signal or the like and to be capable of properly switching and operating signal routes, and to be excellent in reliability, availability and serviceability. Thus, the system will provide an excellent function.

(2) Regarding claim 19:

Claim 19 is same as claim 18. Only the limitation of claim 19 is differed from claim 18 is optical Spectrum.

Note that Kitijima teaches for monitoring the quality (performance) based on measurement of optical wavelength division multiplexed signal light, and admitted prior art teaches plurality of repeater (admitted prior art in Fig. 15).

However, admitted prior art in Fig. 14 teaches optical spectrum (extracted optical spectrum by optical analyzer (107) will be considered as optical spectrum, see Fig. 14 in admitted prior art).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time of invention to incorporate optical spectrum as taught by admitted prior art in to the optical transmission system of Kitijima so that parts of a plurality of repeater nodes can be disposed on the optical transmission path with apparatuses for monitoring the quality based on measurement of the optical spectrum of the wavelength division multiplexed signal light. In this configuration the system will be improved basic performance such as regulate the optical power optical signal or the like and to be capable of properly switching and operating signal routes, and to be excellent in reliability, availability and serviceability. Thus, the system will provide an excellent function.

Allowable Subject Matter

7. Claims 4-7 and 11-17 are objected to as being dependent upon a rejection base claim, but would be allowable if written in independent form including all of the limitations of the base claim and any intervening claims.

8. The following is a statement of reasons for the indication of allowable subject matter:

Claims 4-7 and 11-14 would be allowable because the closest prior art of record (Kitajima) fails to disclose wherein said deterioration factor judging section, when judged that said signal light to be measured is deteriorated in the quality thereof, judges whether or not signal lights exist on wavelength grids adjacent to said signal light to be measured, and when the signal lights exist on the adjacent wavelength grids, repeatedly measures for the plurality of times the frequency of occurrences of bit error in the previously set time for the signal lights on the adjacent grids, and judges the deterioration factor of said signal light to be measured based on said measurement results.

Claims 15-17 would be allowable because the closest prior art of record (Kitajima) fails to disclose wherein the wavelength division multiplexed signal light transmitted over said optical transmission path contains signal lights of different bit rates, said wavelength selecting section includes an optical branching device for branching a signal light to be measured selected by said wavelength selecting section into a plurality of lights according to types of bit rates of the signal lights contained in the wavelength-division multiplexed signal light, and a plurality of optical receivers

corresponding to the bit rates of the signal lights, and the lights branched by said optical branching device are given to said optical receivers.

Response to Arguments

9. Applicants arguments filed on 07/11/2007 have been fully considered but they are not persuasive.

In response to applicant's argument, it is noted that the features upon which applicant (i.e. (1) the invention of claim 1 measures the frequency of error occurrences by repeatedly measuring the frequency of occurrences of bit error in a previously set time for a selected signal light to be measured. Therefore, the invention of claim 1 is capable of providing a measurement time per one occurrence of error of approximately one millisecond in, for example, an optical transmission system having an optical transmission rate per channel of 10 Gbps. As such, the invention of claim 1 provides for decreasing the time required for improvement of signal.

(2). In contrast, the error rate of the optical signal, as provided by Kitaiima et al., corresponds to a so-called Bit Error Rate (BER). Kitaiima et al. discloses that BER measurements require a long period of time and that 10000 frames are necessary for a BER measurement since the frame synchronization is secured, and the process must wait for 10 seconds. Thus, error rate of the optical signal, as disclosed in Kitaiima et al., does not correspond to measuring frequency of error occurrences by repeatedly measuring the frequency of occurrences of bit error in a previously set time for a selected signal light to be measured, as is provided by the invention of claim 1.)

The claim does not either recite "bit error rate is excluded. Thus, it reads on broad claimed language.

Note that the alarm masking unit includes an alarm interface circuit for receiving four kinds of alarms from the optical performance monitors 310 amounting to N in number, an alarm register for storing the alarms, a mask register for setting an alarm mask, and an alarm issuing unit issuing the alarm. The performance monitoring circuit detects a bit error rate, and issues an error rate alarm when the error rate is lowered than a predetermined value [0053], [0055-0058]; in order to received the bit error rate in predetermined time, System must needs to have repeatedly measuring for a plurality of times the frequency of occurrences which is the pre procedure of bit error rate. In addition the given example of "10 G bit/s" is similar to the teaching reference in paragraph [0056] Therefore, the reference meets the limitation of claim.

Conclusion

10. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the

shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Inquiry

11. Any inquiry concerning this communication should be directed to the examiner at (571) 270-1673 Monday- Friday 7:30 AM to 5:00 PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chanh Nguyen, can be reached at (571) 272-7772.

Information regarding the status on an application may be obtained from the Patent Application information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only.

For more information about the PAIR system, see <http://pair-direct.uspto.gov>.

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Any response to this action should be mailed to:

Commissioner of patents and trademarks

Application/Control Number: 10/806,330

Page 14

Art Unit: 2629

Washington, D.C. 20231

Or fax to:

(703)872-9314 (for Technology Center 2600 only)

Shaheda Abdin

08/15/2007

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